National Institute of Environmental Health Sciences

Air pollution and hospital admissions for respiratory diseases in Lanzhou, China

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Abstract:

Lanzhou is among the most seriously air-polluted cities in China as a whole, due to its unique topography, climate, industrial structure and so on. We studied the relationship between different air pollution and respiratory hospitalizations from 2001 to 2005, the total of respiratory hospital admissions were 28,057. The data were analyzed using Poisson regression models after controlling for the long time trend for air pollutants, the "day of week" effect and confounding meteorological factors. Three air pollutants (PM10, SO2, NO2) had a lag effect, the lag was 3-5 days for PM10, 1-3 days for SO2 and 1-4 days for NO2. The relative risks were calculated for increases in the inter-quartile range of the pollutants (139 μg/m3 in PM 10, 61 μg/m3 in SO2 and 31 μg/m 3 in NO2). Results showed that there were significant associations between air pollutants and respiratory hospital admissions, and stronger effects were observed for females and aged ≥65 yrs in Lanzhou.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Temperature

Air Pollution: Interaction with Temperature, Particulate Matter, Other Air Pollution

Air Pollution (other): SO2;NO2

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: China

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Other Vulnerable Population: Females

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content